

2009 ACCESSORIES AND EQUIPMENT

Heated Seats - Service Information - Journey

DESCRIPTION

DESCRIPTION

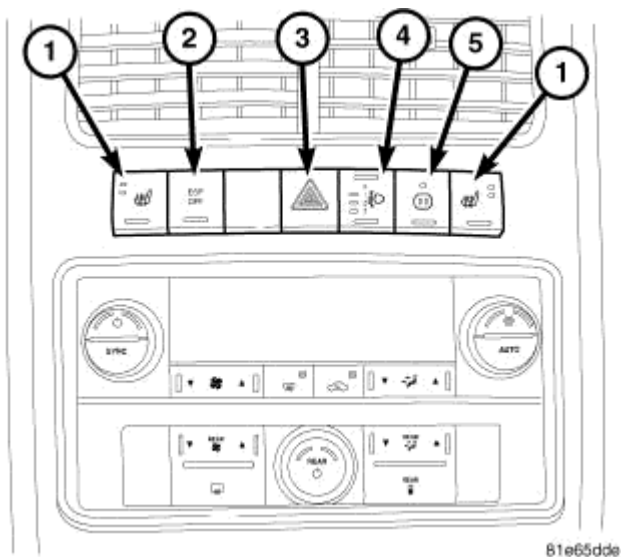


Fig. 1: Accessory Switch Bank Module
 Courtesy of CHRYSLER LLC

Vehicles with the heated seat option can be visually identified by the two heated seat switches (1) located in the center stack of the instrument panel. The switches are located on the outer edges of the Accessory Switch Bank Module (ASBM). The ASBM is located just below the vents and just above the heater and air conditioner controls in the center stack area of the instrument panel.

The heated seat system allows the driver and front seat passenger to select from two different levels of electrical seat heating (HI/LO). The heated seat system includes the following major components:

- **Heated Seat Elements** - Four heated seat elements are used per vehicle. Two heated seat elements are integral to each seat, one in the seat back and the other in the seat cushion.
- **Heated Seat Module** - One heated seat module is used per vehicle. The Heated Seat Module is mounted under the Driver front seat. This module contains the control logic and software for the front heated seat system. The module communicates on the Local Interface Network (LIN) data bus.
- **Heated Seat Switches** - Two heated seat switches are used per vehicle, one for each heated seat. Both switches are integral to the ASBM mounted in the instrument panel center stack.
- **Instrument Cluster (CCN)** - The instrument cluster, sometimes referred to as the Cab Compartment Node (CCN) utilizes integrated software and information carried on the LIN data bus. The CCN serves as the link between the heated seat switches and the heated seat module.

OPERATION

OPERATION

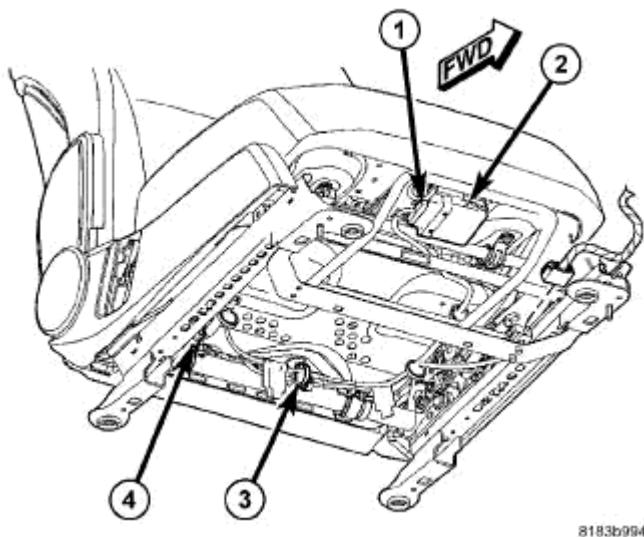


Fig. 2: Locating Heated Seat Module

Courtesy of CHRYSLER LLC

The heated seat system operates on battery current received through a fuse in the Totally Integrated Power Module (TIPM). Fused ignition switch output (Run) circuits are used, so that the heated seat system will only operate when the ignition switch is in the ON position. The heated seat system will turn Off automatically whenever the ignition switch is turned to any position except ON.

A Heated Seat Module (2) is used to control the heated seat system. The module is located under the driver front seat mounted to the seat pan (4). The heated seat module responds to heated seat switch messages and ignition switch status inputs by controlling the 12v output to the front seat heating elements through integral solid-state relays.

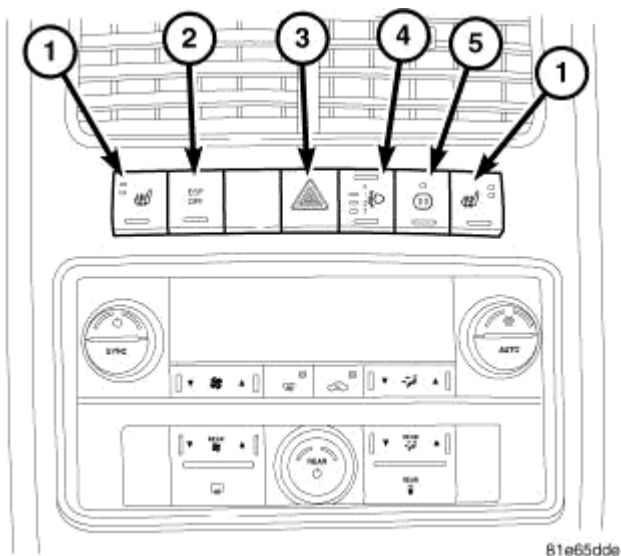


Fig. 3: Accessory Switch Bank Module
Courtesy of CHRYSLER LLC

When either of the heated seat switches (1) are depressed a switch status message is sent to the instrument cluster, sometimes referred to as the Cab Compartment Node (CCN), via the Local Interface Network (LIN) data bus. The CCN then sends a message via the LIN data bus to the heated seat module, signaling the module to energize the heating element for the selected seat. Amber Light Emitting Diodes (LEDs) in the top portion of each switch indicate the level of heat in use: Two LEDs are illuminated for high, one for low, and none for off. The heated seat module sends the LED illumination message to the CCN via the LIN data bus. The CCN then sends the LED illumination message to the accessory switch bank so that the appropriate LEDs are illuminated for any given heating level. Pressing the switch once will select high-level heating. Pressing the switch a second time will select low-level heating. Pressing the switch a third time will shut the heating elements off.

The heated seat module energizes an integral solid-state relay, which supplies battery current to the heating elements. When high-temperature heating is selected, the heaters provide a boosted heat level during the first four minutes of operation after heating is activated. The heat output then drops to the normal high-temperature level. If high-level heating is selected, the control system will automatically switch to the low level after 26 minutes of continuous operation. At that time, the number of illuminated LEDs changes from two to one, indicating the change. Operation on the low setting also turns off automatically after 30 minutes.

The module will automatically turn off the heating elements if it detects an OPEN or LOW short in the heating element circuit.

DIAGNOSIS AND TESTING

HEATED SEAT SYSTEM

In order to obtain conclusive testing, the heated seat system and the Local Interface Network (LIN) data bus circuit must be checked. **Any diagnosis of the heated seat system should begin with, the use of a scan tool and the appropriate diagnostic service information.**

Refer to the appropriate wiring information for complete circuit schematic or connector pin-out information.

NOTE: Vehicles equipped with the heated seat option utilize a low voltage cut-off feature. This feature turns off power to the heated seat system anytime vehicle voltage is below 11.7v or above 15.5v. Be certain to check the vehicle electrical system for proper voltage anytime the power seat system appears inoperative.

Before any testing of the heated seat system is attempted, the battery should be fully-charged.

MODULE, HEATED SEAT

DESCRIPTION

DESCRIPTION

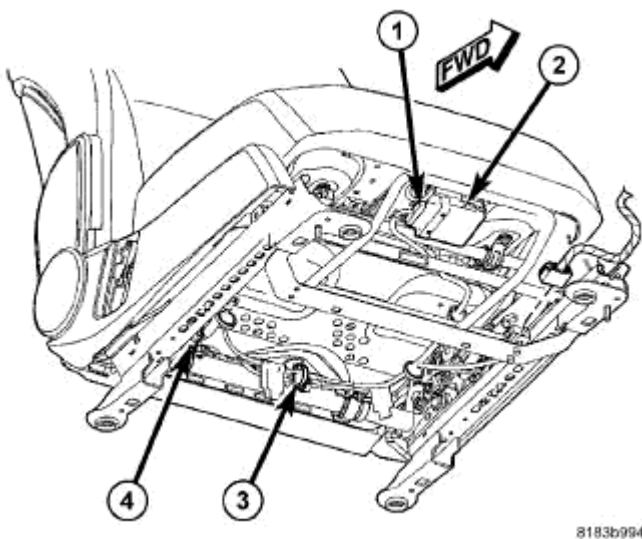


Fig. 4: Locating Heated Seat Module
Courtesy of CHRYSLER LLC

The heated seat module (2) is located under the driver front seat. It has a single electrical connector (1) and a push pin style retainer that secures it to the seat pan (4). The module can be accessed from under the Driver seat with the seat in the full back and up position.

The heated seat module is a microprocessor designed to use the Local Interface Network (LIN) data bus messages from the instrument cluster, sometimes referred to as the Cab Compartment Node (CCN). The CCN receives inputs from the heated seat switches and in turn signals the heated seat module to operate the heated seat elements for both front seats.

OPERATION

OPERATION

The heated seat module operates on fused battery current received from the ignition switch. The module is grounded to the body at all times through the electrical connector. Inputs to the module include Local Interface Network (LIN) data bus messages and standard hardwired 12 volt power and ground. In response to the LIN inputs the heated seat module will control the battery current to the appropriate heated seat elements.

When a heated seat switch LIN data bus signal is received by the heated seat module, the module energizes the selected heated seat element. The Low heat set point is about 38° C (100.4° F), and the High heat set point is about 42° C (107.6° F).

In addition to operating the heated seat elements, the heated seat module sends LED illumination messages to the instrument cluster, sometimes referred to as the Cab Compartment Node (CCN) via the LIN data bus. The CCN then sends the LED illumination message to the accessory switch bank so that the appropriate LEDs are illuminated for any given heating level. Pressing the switch once will select high-level heating. Pressing the switch a second time will select low-level heating. Pressing the switch a third time will shut the heating elements off.

If the heated seat module detects a heated seat element OPEN or SHORT circuit, it will record and store the appropriate Diagnostic Trouble Code (DTC).

DIAGNOSIS AND TESTING

HEATED SEAT MODULE

In order to obtain conclusive testing, the heated seat system and the Local Interface Network (LIN) data bus circuit must be checked. **Any diagnosis of the heated seat system should begin with, the use of a scan tool and the appropriate diagnostic service information.**

Refer to the appropriate wiring information for complete circuit schematic or connector pin-out information.

NOTE: Vehicles equipped with the heated seat option utilize a low voltage cut-off feature. This feature turns off power to the heated seat system anytime vehicle voltage is below 11.7v or above 15.5v. Be certain to check the vehicle electrical system for proper voltage anytime the power seat system appears inoperative.

Before any testing of the heated seat system is attempted, the battery should be fully-charged.

REMOVAL

REMOVAL

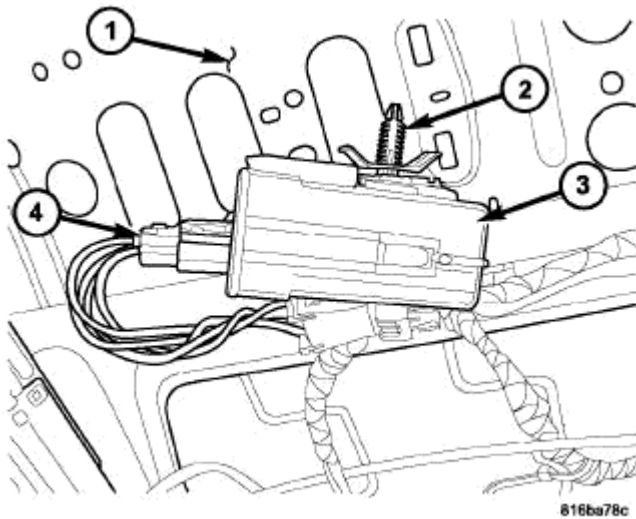


Fig. 5: Locating Heated Seat Module
Courtesy of CHRYSLER LLC

CAUTION: The Heated Seat Module mounting tab can be damaged during module removal and installation. Use care to properly align tab to prevent binding that could result in tab breakage.

1. Position the driver front seat to the full rearward position.
2. Disconnect and isolate the battery negative cable.
3. Disconnect the wire harness connector (4) from the heated seat module (3).
4. Unsnap the heated seat module retaining tab (2) from the seat pan (1).
5. Remove the heated seat module (3) from the vehicle.

INSTALLATION

INSTALLATION

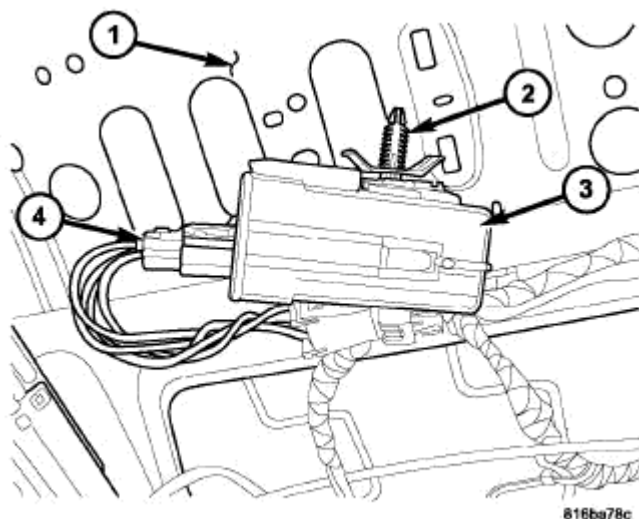


Fig. 6: Locating Heated Seat Module

Courtesy of CHRYSLER LLC

CAUTION: The Heated Seat Module mounting tab can be damaged during module removal and installation. Use care to properly align tab to prevent binding that could result in tab breakage.

1. Install the heated seat module (3) into the vehicle.
2. Position the retaining tab (2) with the mounting hole in the seat pan (1). Firmly apply even pressure to the module (3) until the mounting tab is fully seated.
3. Connect the wire harness connector (4) to the heated seat module (3).
4. Connect the battery negative cable.
5. Check for proper heated seat system operation.

PAD, HEATER

DESCRIPTION

DESCRIPTION

Vehicles equipped with the optional heated seat system have two carbon fiber heated seat elements located in each front seat. One heating element is used for each seat cushion and another for each seat back.

Each of the heated seat elements consist of multiple heating circuits operating in parallel throughout the carbon fiber element. The heated seat elements are captured between the leather trim cover and the seat cushion assembly. If a malfunction occurs in one or more of the individual carbon fiber circuits, the others will continue to provide heat.

The heated seat elements cannot be repaired. If found to be damaged or inoperative, a new heating element

assembly must be installed.

OPERATION

OPERATION

One end of the heated seat element is connected to ground at all times through a splice under the seat. Battery current is directed to the other end of the heated seat element by the heated seat module. The heated seat module will energize the heated seat element when the heated seat switch is depressed in the LOW or HIGH position.

As electrical current passes through the heated seat element, the resistance of the wire used in the element disperses some of the electrical current in the form of heat. The heat produced by the heated seat element then radiates through the underside of the seat cushion and seat back trim covers, warming the seat cover and its occupant.

DIAGNOSIS AND TESTING

HEATED SEAT ELEMENT

Refer to the appropriate wiring information for complete circuit schematic or connector pin-out information.

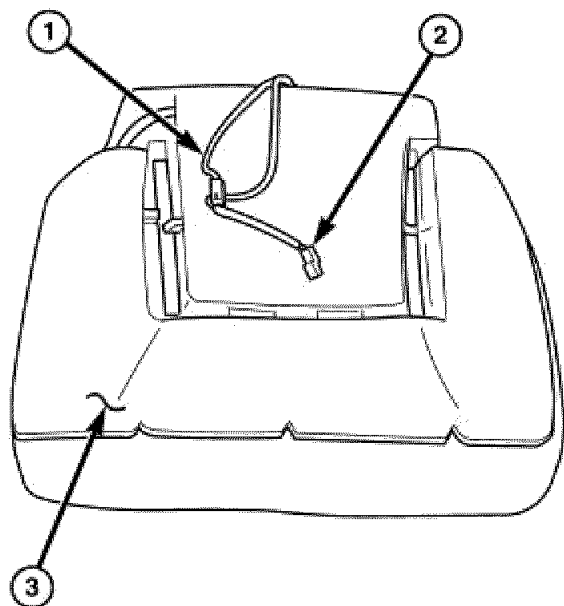
The wire harness connectors for the heating elements are located under the seat.

NOTE: When checking heated seat elements for continuity, be certain to move the heating element being checked. Moving the element, such as sitting in the seat will eliminate the possibility of an intermittent open in the element which would only be evident if the element was in a certain position. Failure to check the element in various positions could result in an incomplete test.

1. Locate and disconnect the seat element electrical connector.
2. Check the resistance between the circuit leading in and out of the suspect heated seat element. The resistance should be between 3.0 - 5.5 ohms for a seat cushion element and 4.0 - 6.0 ohms for a seat back element. If OK, see [Diagnosis and Testing](#) . If not OK, replace the inoperative heated seat element.

REMOVAL

REMOVAL



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Fig. 7: Removing/Installing Heated Seat Element

Courtesy of CHRYSLER LLC

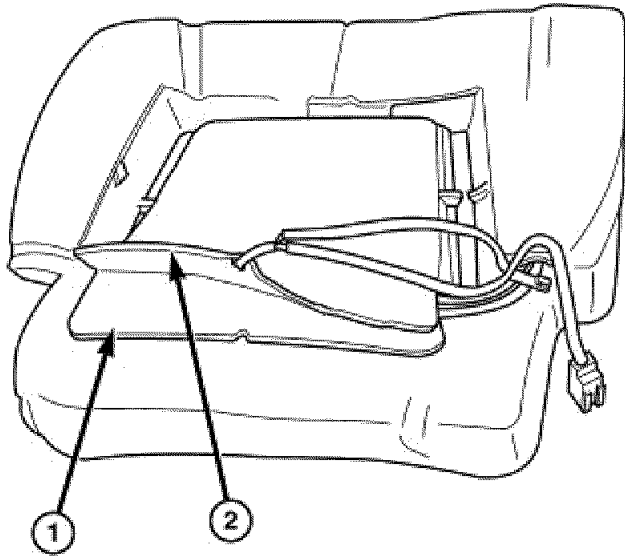
NOTE: The factory installed heating element can be removed from foam cushion by carefully peeling the element off along the adhesive lines.

NOTE: Heated seat cushion shown in illustration. Heated seat back similar.

1. Disconnect and isolate the battery negative cable.
2. Remove the appropriate seat cushion trim cover or seat back trim cover. Refer to **Body/Seats/COVER, Seat Cushion - Removal** . Refer to **Body/Seats/COVER, Seat Back - Removal** .
3. Disconnect the inoperative heated seat cushion or seat back element electrical connectors (2).
4. Peel the heater element off the foam pad, being careful not to remove excessive foam in the process.

INSTALLATION

INSTALLATION



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Fig. 8: Identifying Replacement Heating Element And Factory Installed Heating Element
Courtesy of CHRYSLER LLC

CAUTION: During the installation of the replacement heating element, be careful not to fold or crease the element assembly. Folds or creases will cause premature failure.

NOTE: Heated seat cushion shown in illustration. Heated seat back similar.

1. Peel off the adhesive backing on the back of the replacement heating element (2) and stick on foam pad directly where the original element was placed (there will be adhesive marks on the foam outlining factory installed element) (1).

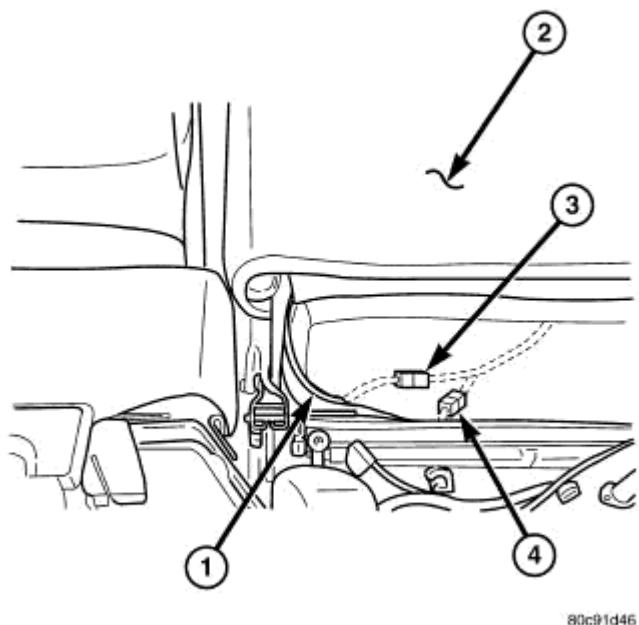


Fig. 9: Connecting New Heating Element Electrical Connectors
Courtesy of CHRYSLER LLC

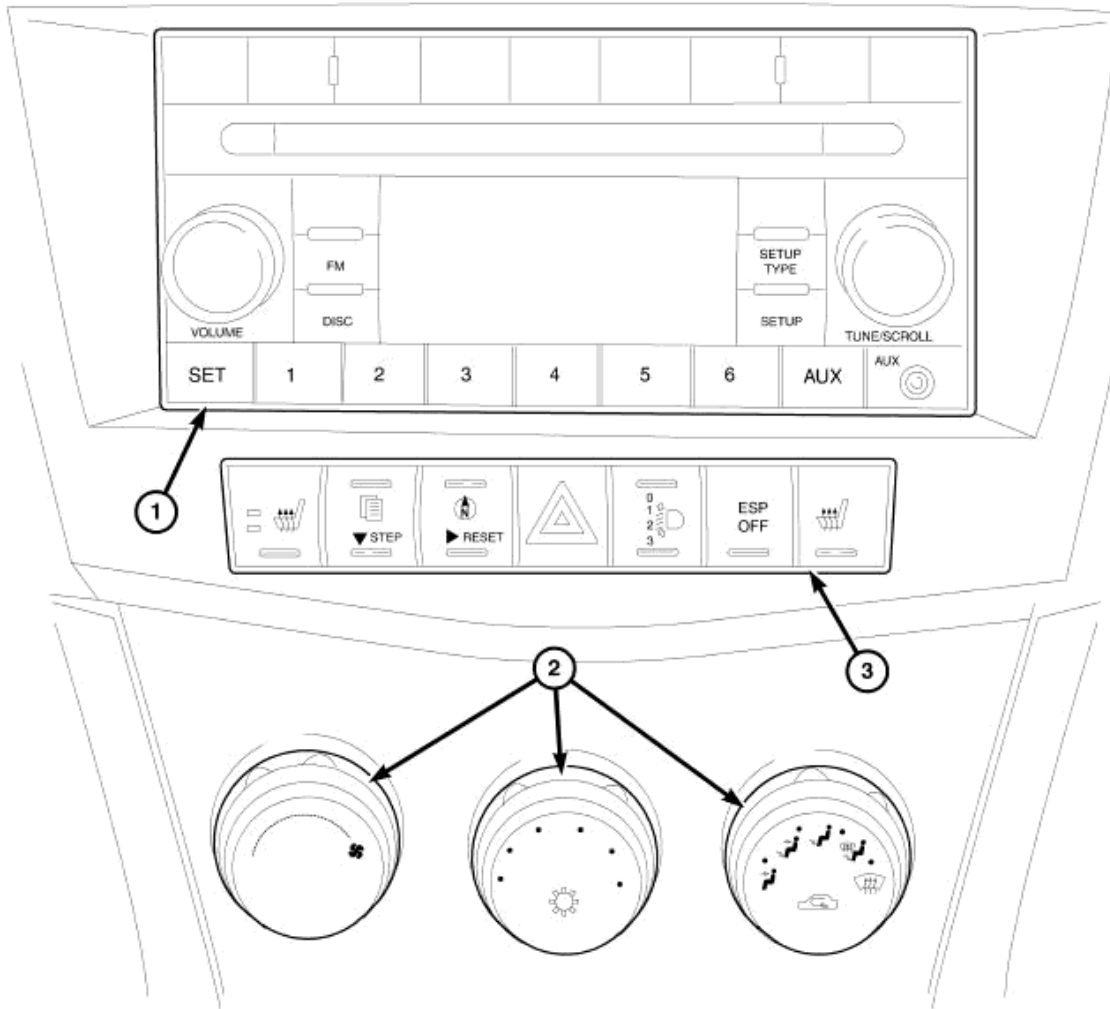
2. Connect the new heating element electrical connectors (3 AND 4).
3. Connect the battery negative cable.
4. Verify heated seat system operation.
5. Install the appropriate seat cushion trim cover or seat back trim cover. Refer to **Body/Seats/COVER, Seat Cushion - Installation** . Refer to **Body/Seats/COVER, Seat Back - Installation** .

NOTE: Make certain the seat wire harness is correctly routed through the seat and seat back. The excess wire between the cushion and back elements should be securely tucked between the rear of the cushion foam and the rear carpet flap of the trim cover. The factory installed heater element should be completely removed from the system and discarded.

SWITCH, HEATED SEAT

DESCRIPTION

DESCRIPTION



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Fig. 10: Locating Accessory Switch Bank Module
 Courtesy of CHRYSLER LLC

Two heated seat switches are located in the center stack of the instrument panel. The switches are located on the outer edges of the Accessory Switch Bank Module (ASBM). The ASBM (3) is located just below the radio (1) and just above the heater and air conditioner controls (2) in the center stack area of the instrument panel. If either of the switches is damaged or inoperative the complete ASBM assembly must be replaced.

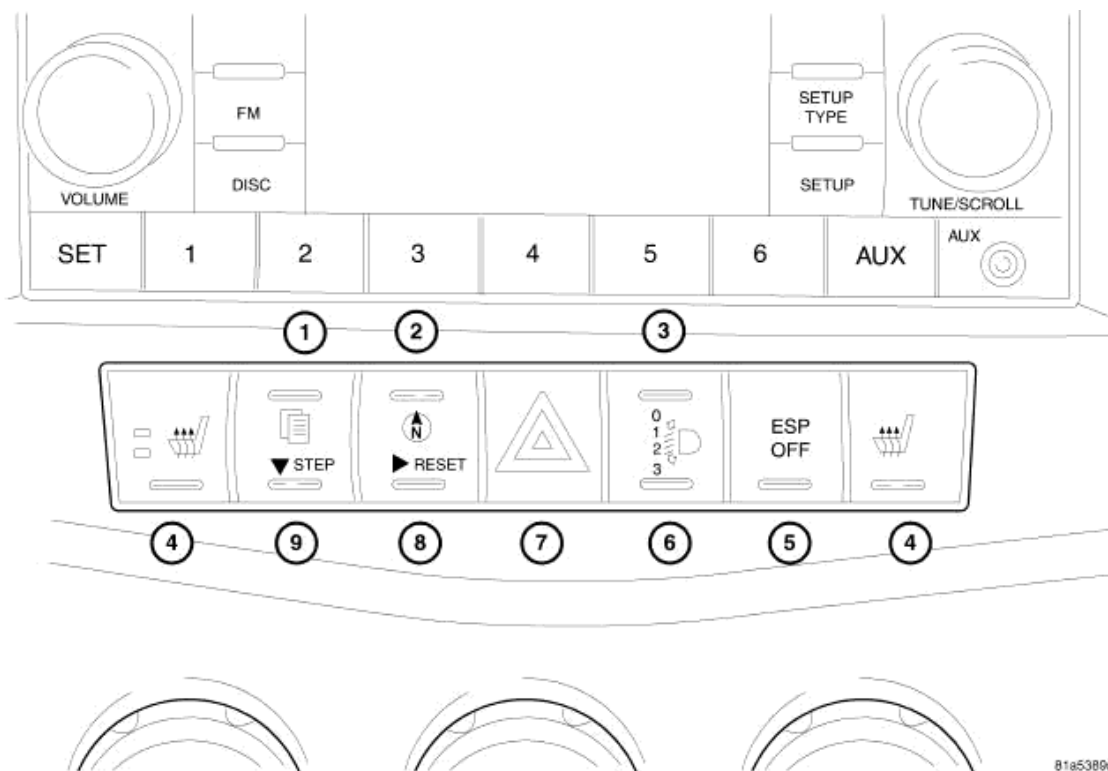


Fig. 11: Identifying Assembly Switch Bank Module Callouts
 Courtesy of CHRYSLER LLC

Each heated seat switch (4) provides a resistor-multiplexed signal to the instrument cluster, sometimes referred to as the Cab Compartment Node (CCN). Amber Light Emitting Diodes (LEDs) on the outside edge of each switch indicate the level of heat in use: Two LEDs are illuminated for high, one for low, and none for off. Pressing the switch once will select high-level heating. Pressing the switch a second time will select low-level heating. Pressing the switch a third time will shut the heating elements off.

The LED indicator lamps in each heated seat switch cannot be repaired. If the LED lamps are inoperative or damaged, or the switch is inoperative or damaged the complete ASBM assembly must be replaced. See **Removal**.

OPERATION

OPERATION

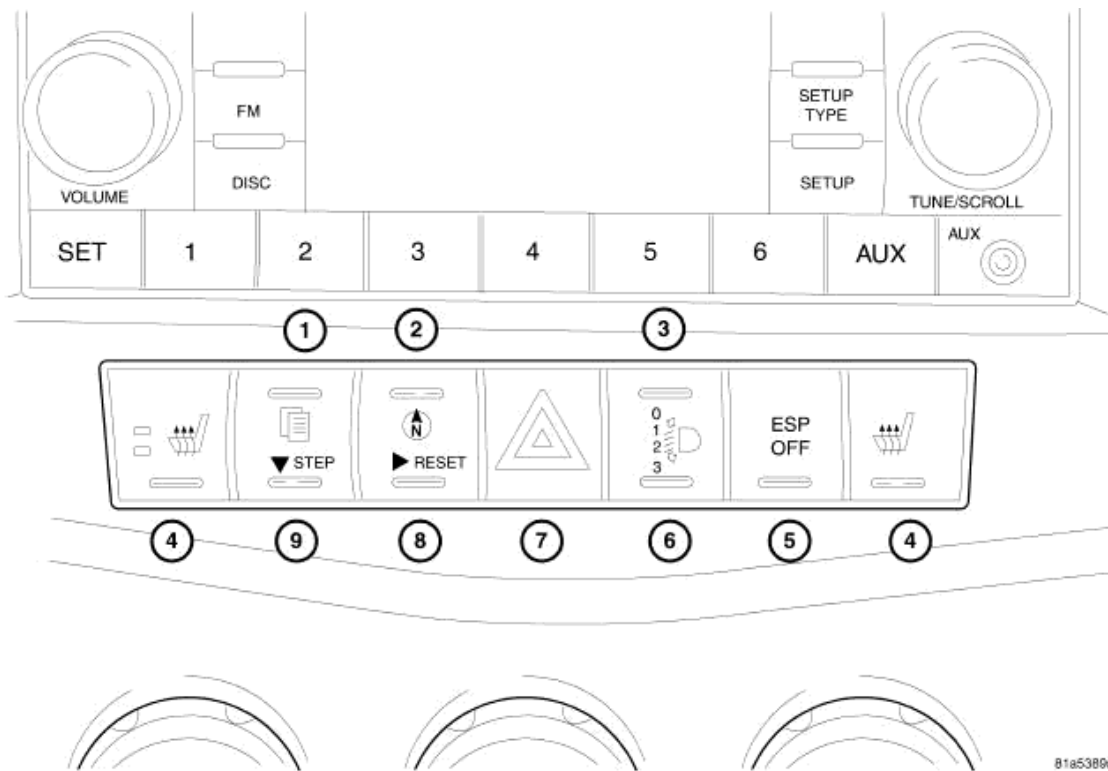


Fig. 12: Identifying Assembly Switch Bank Module Callouts

Courtesy of CHRYSLER LLC

The heated seat switches (4) are active any time the Local Interface Network (LIN) data bus is active. Depressing the heated seat switch provides a switch status message to the instrument cluster, sometimes referred to as the Cab Compartment Node (CCN), via the LIN data bus. The CCN is responsible for supplying the LIN data bus message to the heated seat module, signaling the module to power the heated seat element of the selected seat and maintain the temperature setting. If the heated seat switch is depressed to a different position (Low or High) than the currently selected state, the CCN will go through the process again to change the temperature setting.

DIAGNOSIS AND TESTING

HEATED SEAT SWITCH

In order to obtain conclusive testing, the heated seat system and the Local Interface Network (LIN) data bus circuit must be checked. **Any diagnosis of the heated seat system should begin with, the use of a scan tool and the appropriate diagnostic service information.**

Refer to the appropriate wiring information for complete circuit schematic or connector pin-out information.

NOTE: Vehicles equipped with the heated seat option utilize a low voltage cut-off feature. This feature turns off power to the heated seat system anytime vehicle voltage is below 11.7v or above 15.5v. Be certain to check the vehicle electrical

system for proper voltage anytime the power seat system appears inoperative.

Before any testing of the heated seat system is attempted, the battery should be fully-charged.

REMOVAL

REMOVAL

WARNING: Disable the airbag system before attempting any steering wheel, steering column, or instrument panel component diagnosis or service. Disconnect and isolate the negative battery (ground) cable, then wait two minutes for the airbag system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the airbag system. Failure to take the proper precautions may result in accidental airbag deployment and possible serious or fatal injury.

NOTE: The heated seat switches are integral to the Accessory Switch Bank Module (ASBM) and cannot be serviced separately. The complete ASBM assembly must be replaced.

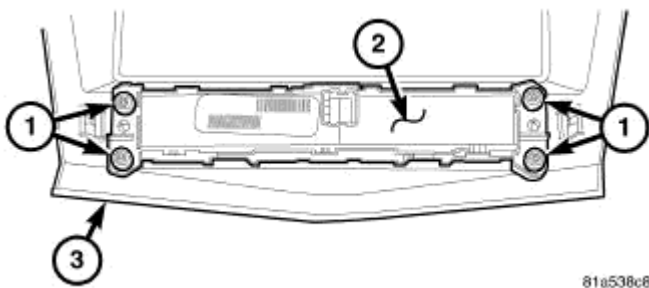


Fig. 13: Removing/Installing Assembly Switch Bank Module (ASBM)

Courtesy of CHRYSLER LLC

1. Disconnect and isolate the battery negative cable.
2. Remove the center bezel from the instrument panel. Refer to **Body/Instrument Panel/BEZEL, Instrument Panel - Removal**.
3. Remove the four screws (1) that secure the ASBM (2) to the back of the instrument panel center bezel (3) and remove the ASBM.

INSTALLATION

INSTALLATION

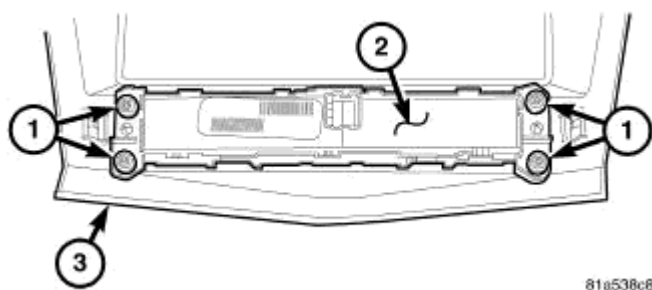


Fig. 14: Removing/Installing Assembly Switch Bank Module (ASBM)

Courtesy of CHRYSLER LLC

NOTE: There are different Accessory Switch Bank Module (ASBM) configurations available based on the option content of the vehicle. Ensure the ASBM being installed matches the vehicle options.

1. Position the ASBM (2) onto the back of the instrument panel center bezel (3).
2. Install the four screws (1) that secure the ASBM to the center bezel. Tighten the screws to 2 N.m (17 in. lbs.).
3. Install the center bezel onto the instrument panel. Refer to **Body/Instrument Panel/BEZEL, Instrument Panel - Installation** .
4. Connect the battery negative cable.
5. Verify heated seat system operation.